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ABSTRACT

Current research suggests that teacher development evolves in stages, and that teacher concerns as professionals are central to teacher development. The concerns theory suggests that teacher growth involves a gradual change from concerns about self, to concerns about the task at hand, to concerns about the connections and implications of self, students, and task (the impact stage). A checklist for measuring and drawing the characteristics patterns of the stages in teachers' concerns was recently presented by F. F. Fuller and G. D. Borich (1969, 1986, 1992, 1995). This Teacher's Concerns Checklist is recommended for assessing the educational needs of preservice teachers, especially in the formative evaluation of teacher education programs. In this paper, early findings from a classroom-based study of the Stages of Concerns Checklist are reported. These findings are from data collected over 3 consecutive semesters in 3 teacher education classes in 1994 and 1995 for a total of 66 students. Results support the reliability of the checklist with preservice teachers, and they support its construct validity in broad terms. Recommendations are made for additional checks of the instrument's validity against some other existing measures of teachers' stages of development and for use of larger sample sizes to enhance the instrument's potential for external validity. Appendixes contain the Stages of Concerns Checklist and frequencies for task-self-impact aspects with histograms for normality. (Contains 6 figures, 7 tables, and 31 references.) (SLD)

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ED 405 348

Stages of Concerns in Preservice Teacher Development: Instrument Reliability and Validity in a small Private Liberal Art College

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Abstract

Current research suggests evidence from varied sources which indicates that teacher development evolves in stages. One of the most recent theoretical constructs, initiated by Fuller (1969), suggests that "teachers' concerns" as professionals is central to an explanatory theory of such development and its patterns. The theory is now being developed and tested by researchers and practitioners in teacher education as well as other helping professions.

A checklist for measuring and drawing the characteristic patterns of the stages in teachers' concerns was recently presented by Fuller, Borich and their associates (1969; 1986; 1992; 1995). They recommended the Teacher's Concerns Checklist for adoption as a useful tool for the formative evaluation as well as a valid tool for the assessment of preservice teachers' needs, especially in innovative programs that claim to be grounded in the theoretical constructs of "developmental stages" and "teachers' concerns." As the Teacher Education program intends to be innovative because of its non-traditional design, it is important to show how efforts are being made to investigate three constructs that underlie the "concerns" theory (concerns for Self, concerns for Task and concerns for Impact) because those changes in levels of professional concerns are considered as program outcomes.

To evaluate program effectiveness and assess students' learning and professional development needs, the designers of the teacher education program in the context of this study have embedded a process of multiple measures in the sequence of courses. Those multiple measures and evaluations are intended to document the developmental changes that occur within preservice teachers from entry to exit out of the preservice teachers' preparation process as part of measuring their readiness to enter the workforce. The use of the Stages of Concerns Checklist is one of the strands of classroom research strategies applied to the program for that purpose. As a first step in the documentation process, a priority has been given to checking the validity and reliability of the proposed checklist while it is being applied to this specific learner's population under the program's specific conditions.

In this paper, the early findings from an "classroom-action-based" study of the Stages of Concerns Checklist are reported. The findings are about data collected over three consecutive semesters in three foundations classes between Fall 1994 and Fall 1995. The reliability, validity and levels of students' performance on the checklist are reported. A comparison is also made between the data obtained in this study and data previously obtained by Borich and his colleagues (1992) who tested the reliability and validity of the checklist in a different setting on a similar population with different instrumentation. The preservice education students involved in this study were at the initial stage in their professional preparation. The preservice professional preparation was taking place in a small, rural liberal arts college in the Southeast United States.

Short Biography

Dr. Frank M. Buhendwa, currently Assistant Professor of Education at Ferrum College at Ferrum, Virginia, has a Bachelor's Degree from the University of Zaire (1973), a Postgraduate Diploma from Ealing Technical College (London, 1977), a Master's Degree in TESOL from Northern Illinois University, Dekalb,Il. (1988), and an Education Doctor (Ed.D) degree in Curriculum and Instruction from Illinois State University, Normal, Illinois (1994). His major areas of study are curriculum and instruction design and evaluation. He is teaching Foundations of Education courses and Strategies for Middle and High School preservice teachers. His other interests and research publications include multicultural issues and the integration of new technologies in learning and teaching.

Stages of Concerns in Preservice Teacher Development: Instrument Reliability and Validity in a small Private Liberal Art College

Introduction

Based on current research, there is growing evidence both from quantitative and qualitative sources that teacher development is a process that evolves in stages. There are various theoretical explanations of such development, but one of the most recent theoretical constructs was initiated by Fuller (1969). At the center of the theory is the view that teachers' developmental stages can be studied and expressed in terms of their concerns as professionals. Thus, the teachers' developmental stages may be equated with developmental patterns of teacher's concerns. The theory is now being expanded and investigated by many other researchers and practitioners in teacher education (Borich, 1986; Borich & Tombari, 1995; Burden, 1986; Cicchelli, 1990; Rogan, Borich & Taylor, 1992; Rutherford & Hall, 1990; Ryan, 1992; Sacks & Harrington, 1982).

To study the development of teacher concerns in preservice contexts, instruments are now being developed and tested to capture information about preservice teachers' development stages. One of the most used instrument today is the Teacher Concerns Checklist, which has been developed by Fuller, Borich and their colleagues (Fuller & Borich, 1995; Rogan, Borich &

Taylor, 1992). This checklist is now being presented for adoption as a useful tool for formative evaluation as well as for assessment of preservice teachers' needs. Recently, Borich and Tombari presented a revised checklist (Fuller & Borich, 1995) and recommended its use as part of a standard instructional package of materials for students in foundations classes which are a usual part of a college-based teacher education process (Borich & Tombari, 1995).

The checklist is a paper and pencil instrument which investigates three constructs: concerns for self, concerns for task and concerns for impact (Fuller & Borich, 1995). The validity and reliability of the checklist have been studied by (Rogan, Borich & Taylor, 1992) and evidence about relatively high reliability coefficients of .91 for self, .84 for task and .94 for impact have been obtained.

The theoretical construction of teacher development used in this instrument study assumes teacher growth as a gradual change from concerns about self (survival stage), to concerns about the task at hand (task stage) and concerns about the connections and implications of self with students and the task (the impact stage) (Borich & Tombari, 1995, 4-8). In that process, a developing teacher gradually moves from overemphasis on issues of self to an orientation towards issues of the complexity of the teaching tasks and roles. In the final stage of a teacher's development, the professionally maturing teacher finally makes

more room for concerns about the impact on the students and their learning process as they interact with contextual and other variables in the situation. Dreyfus & Dreyfus (1986) view this development as that change from a "novice" to an "advanced beginner," culminating into a final phase of "expertise, competence and proficiency." Diamond (1988) used a five-phased model and labelled the phases as pre-conjectural, dogmatic, decision-making, inventive/conjectural and emancipatory stages.

Seen from the framework of the "Concerns Theory," the development process seems to parallel the stages of intellectual and moral development which have been theorized elsewhere about college students in general (Perry, 1970) and about teacher education students in particular (Bennett, 1990; Bennett, Niggle & Stage, 1990; Buhendwa, 1994). The Stages of Concerns Theory is now being examined to explain observed characteristics of professionals in any "change" situation. More particularly, this theory is being explored to explain how professionals adapt to changing culture which is brought by such realities as the use innovative technologies (Hall & Rutherford, 1979; Linnell, 1994a, 1994b), and change of "self" such as in exercise and psychotherapy (Diclemente et al., 1985; Diclemente et al., 1991; Bargman, 1991). In this context, the individual seems to gradually move from informational to personal and management concerns, stages that correspond to Diclemente's or Bargman's stages of pre-contemplation, preparation/ready for action,

action, maintenance/relapse.

In addition to the findings by Rogan, Borich and Taylor about instrument validity and reliability, the following findings from previous research on the study of the checklist were noted:

(a) Effect of age: Qualitative differences exist between those who find the courses relevant (the older ones with prior experience working with children) and those who do not (often younger ones);

(b) Effect of time: Stages of concerns that preservice students undergo are still observed even some time after completion of preservice preparation among many inservice beginning teachers, which could mean the preservice group in this study may be at the self stage (the best of them just entering the task stage);

(c) Reliability of instrument: Relatively high Cronbach alpha reliability coefficients found by Rogan & Borich were .91, .84 and .94 for self, task and impact respectively;

(d) Specific sub-group differences: Preservice teachers were not differentiated within and among themselves based on their scores on the task and impact dimensions of the scale while a distinction could be made among or between groups based on scores on the self dimension;

(e) Potential for competing variables: Other environmental and contextual events that may suddenly influence some of the concerns of preservice teachers (e.g. the current political issues in education) have been pointed out.

The Problem

There are a few good reasons why a technology-mediated Teacher's Concerns Checklist is worth studying and applying in the teacher professional development process at Ferrum college and similar programs:

1. The teacher professional preparation program is based on a developmental model both in the conception of the teachers and the students who are likely to be taught by the graduates.
2. The developmental model is central to the teacher education program and its philosophy (clinical and experiential) as highlighted in the program handbook (Student Handbook, 1994, p. 1-2).
3. The design for the teacher education foundations classes and the whole teacher preparation process use multiple qualitative sources of evidence to ascertain that growth is evidenced both at the instructional level and the programmatic levels (Bailey, Buhendwa & Meltzer, 1995).
4. An early infusion of the use of technology is encouraged to enhance the effectiveness of the preparation process to meet the challenge of increased technological changes in the work place. The process begins in the Introduction Course (Education 202) and will continue in the upper-level education courses where the students are given the opportunity to be introduced and enhance

their basic computer literacy as well as the questioning of the usefulness of new and old technologies for teaching and learning.

Therefore, it was found appropriate to use the checklist through technology mediation as an alternative mode of administration to satisfy the need for integration of technology. There are advantages of obtaining data through the administration of this checklist as well as studying it:

1. Data obtained will serve the need for evaluation and assessment by generating quantitative data and documenting the developmental process in each course in addition to the qualitative data obtained through the portfolios , peer/group evaluations and self-evaluations and assessments which abound in the teacher preparation process (Student Handbook, 1995, section F through Q; Bailey, Trang & Meltzer [undated MS], Bailey, Buhendwa & Meltzer, 1995).
2. Obtained data from the applications of this instrument may be useful for the validation of the data obtained through the use of other modes of assessment used in the teacher education process such as the portfolios assessments. Data from the Stages of Concerns studies would also serve the purpose of triangulation of research and evaluation results and enhance confidence in the results obtained by the non-quantified measures used in the program.
3. On the other hand, the use of a technology mediated checklist

would reinforce the concept of integration of technology for more effective teaching and learning, both from theoretical and practical grounds. The analysis of portfolio materials is a more onerous process in terms of time and efforts of coding, processing and interpreting. Having an alternative, self-administered and validated measure would be a great advantage from an instructional perspective and from the vantage of curriculum design, evaluation and needs assessment (Mark & Shotland, 1987), especially in small teacher education programs in which both teachers and administrators are pressed by reduced time for research and evaluation because of the amount of time devoted to classroom teaching alone.

In a process that favors both a developmental view of education and integration of technology, a validated, computer-mediated instrument is needed for the study of preservice teachers' developmental stages from their time of entry in the program to the exit point. Very few such instruments exist at this point in time. Such an instrument should yield results that are consistent with the theoretical base of the Stages Theory of teacher development. The instrument should also be reliable in its mode of application and for the population for which it is intended.

Three purposes were therefore defined for the present instrument development and study process:

(a) To gather information about the construct validity and

reliability check when the content of the 45-item instrument representing three major constructs in a three-factor model (Self, Task, and Impact) is maintained;

(b) To gather information about the teacher education program participants with regards to the features underlying the "teachers' stages of concerns" as a developmental theory and identify the most informative features of the population which could be useful for both instructional and programmatic purposes.

(c) To equip the teacher preparation program with a validated instrument serving the purposes of instruction, needs assessment and program evaluation.

Method

Setting and Participants

Students enrolled in the teacher preparation program were used in this study. They were enrolled in three sequence courses which emphasize issues and concerns of self and society in the initial stage (Educ-202, Educ-301 and Educ-303). The students at this stage are at least at the sophomore year and are continuing involvement in content area courses represented by their baccalaureate major. The teacher education courses represent their minor areas of study within their Bachelor's Degree program. The majority of the students are traditional undergraduate students, as is normal for small liberal arts colleges in the Southeast. A few of them are returning second-

career students from a rural, predominantly white-ethnic community. A very small percentage of the sample consisted of transfer students from neighboring public community colleges. According to the requirements, most candidates had a GPA equal to or above 2.50 on admission into the teacher education program (Student Handbook, 1995, p. 13). They had also been required to maintain a GPA of 3.00 to pass from one course of the teacher education sequence to another course segment.

The Instrument

The content of the items in the Stages of Concerns Checklist used in this study was similar to the content of the selection of items tested by the designers of the checklist (Borich, 1986; Fuller & Borich, 1995; Rogan, Borich & Taylor, 1992). Forty-five items (see Appendix 1) were prepared as text to be viewed on a computer screen. The choices were made more personal by being introduced with a phrase "I am concerned about..." or ended by "... is something a am [still] a little concerned about" and equivalent phrases. The choices were also expressed in terms of agreement/disagreement on a five-point scale, corresponding to the five point-scale used by the designers Borich, Fuller and Rogan. For tabulating and computing scores, the values of the input choices were reversed when appropriate so that for all choices the value "1" indicated the lowest level of concern and

"5" indicated the highest level of concerns.

The scores were computed as a mean of the scaled points obtained from respondents' choices about the 45 items of the checklist. However, in terms of evaluation of progress in the program, it is desirable that preservice teachers at any level of the preparation process should have higher and higher levels of concerns for impact and task than for self as they make progress in the program, that is the pattern Impact > Task > Self. Also in general terms, scores closer to five on the scale for Self and Impact are indicative of strong "undesirable outcomes" from a programmatic perspective; in such a case individuals exhibit a high degree of discomfort and lack of confidence in their own abilities to take on their roles as independent teachers, which is typical of the early stages of a professional's development. Conversely and equally in terms of desirable patterns, higher levels of concerns about impact at a later stage, especially at a later stage in the professional preparation process, are more desirable than stronger concerns about self or task, as in the following illustration:

	+ ---------->		_
Expected (Early Stage):	**SELF**	**TASK**	**IMPACT**
Desirable (Later Stage):	**IMPACT**	**TASK**	**SELF**

Procedures

The Stages of Concerns Checklist was applied in a computerized format with questions and alternative choices appearing on the monitor screen with appropriate instruction for proceeding within the computerized delivery of the program. The instrument was administered at the beginning of the semester to obtain the data for the on-going research. Then the teacher candidates were exposed to learning activities in an instructional design which focuses on social and professional issues of education, involvement with technology (for Educ-202 students) and historical, psychological and philosophical foundations (for Educ-300 level students). The Stages of Concerns Checklist was administered to preservice teachers in each class of Educ-202 and Educ-301 during the semesters spanning Fall 1994 and Fall 1995. In all, one class of Educ-301, two classes of Educ-202 and one class of Educ-303 were involved in this database, which included 66 students. In this scenario, only the Education 301 and Education 303 students had completed the Education-202 course, and may have had a stronger effect of participation in teacher education. No data collection was planned for posttest at this point.

Statistical Design and Hypotheses

Data were analyzed using the descriptive statistics (mean,

frequencies, STD), the reliability coefficient alpha and the t-test for dependent means. A reliability test was run on the 45 items and on all three sections of the checklist with all items entered using the SPSS V4.0 statistical package for microcomputers. It was necessary to find out if items correlations and alpha levels would be different from the ones obtained in one previous study taken as reference. In other words the Cronbach alpha would be lower or higher than the ones obtained by Rogan, Borich & Taylor (.91, .84 and .94 respectively for self, task and impact).

Hypotheses. Expressed in their null form, the following working hypotheses were assumed in the study of this instrument:

I. There will be no difference between the population characteristics and response to instrument from the present study and the ones obtained in the previous study of a similar population.

II. There will be no difference between the Cronbach alpha coefficient levels obtained in this study on each part of the instrument and the ones obtained from existing studies on a similar population.

III. There will be no difference in the pattern of mean scores obtained in this study and the one obtained in a similar study using a population with similar characteristics. There would be no difference in mean scores on Self, Task or

Impact for the overall instrument and for the entire group as well for identified sub-groups in the sample.

Analyses. Hypothesis I was treated by examining the population characteristics and response levels exhibited by the descriptive data. No specific test-statistics was used. Hypothesis II was examined through data involving the reliability check procedure. The reliability check was conducted first on the total instrument, then on the parts of the instruments, using the appropriate procedure for default Cronbach Alpha levels and summary statistics. To determine the theoretical construct of the instrument (H3), a dependent *t*-test for group means was conducted on all data for all identifiable sub-categories within this sample set to observe the pattern of means differences compared to the order posited by the theoretical construction (Self > Task > Impact) from highest to lowest. The test was conducted based on the assumption of normality or near normality of the results obtained on the dependent variables as exhibited by the histograms in Appendix 2.

Results

Descriptive Data

The sample consisted of 66 teacher education students evenly distributed over the three semesters from Fall 1994 to Fall 1995. There were more students enrolled in the Education 202 than the

Education 300 level courses. There were more females (72.7) than males (27.3%). Seventy eight percent were between 18 and 24 years of age and twenty-one percent above age 24. The majority where white-ethnic (78.8%) whereas only 21 % were minorities. About half of the group were sophomore (48.8%) the others were either juniors, seniors or identified themselves as graduates returning to teacher education for certification. More than one third declared languages as their major and future teaching area (28.8%), about one-third declared math or sciences their preferred area of teaching (31.8%) a little less than one-third (22.7%) had selected the professionally oriented areas of fine arts and physical/health education and a little over 16 percent had chosen other areas (social studies or undecided about their choice). The students had come from a "moderate-to-high" cultural mix in their high school environment characterized by a sizable population from "minority" cultural backgrounds. The following table (Table 1) indicates the distribution of the sample for all those categories.

Table 1: Summary of prospective teachers' demographic characteristics

CATEGORY	VALUE Label		f	% of Total	Cumul. %	Total %
Term	Fall	1	48	72.7	72.7	72.7
	Spring	2	18	27.3	27.3	100.0
Course	ED202	4	51	77.3	77.3	77.3
	ED300-level	5	15	22.7	22.7	100.0
Gender	Male	1	18	27.3	27.3	27.3
	Female	2	48	72.7	72.7	100.0
Age	18-20 Years	1	33	50.0	50.0	50.0
	21-24	2	19	28.8	28.8	78.8
	25-30	3	14	21.2	21.2	100.0
Ethnicit	Non-Whites	4	14	21.2	21.2	21.2
	White	5	52	78.8	78.8	100.0
Classrnk	Sophomore	2	32	48.5	48.5	48.5
	Junior	3	21	31.8	31.8	80.3
	Senior	4	13	19.7	19.7	100.0
Teachare	Languages	1	19	28.8	34.5	34.5
	Sciences	2	21	31.8	38.2	72.7
	Others	3	15	22.7	27.3	100.0
	Missing	9	11	16.7		
Hsdivers	6 TO 10%	2	10	15.2	15.4	15.4
	11 TO 25%	3	25	37.9	38.5	53.8
	25 OR MORE	5	30	45.5	46.2	100.0
	Missing	.	1	1.5		

Note. Number of cases N=66; Languages= English or Foreign Languages; Others = Arts, Physical Education or Social Studies (including History majors.

The students in this study scores in the middle range of the scale on all aspects examined. The pattern is illustrated by the appended graphs as Figures 1, 2 and 3. The detailed data are given in Tables 2, 3 and 4. Based on the student's response to the Self part of the instrument, it is noticeable that the sample was close to the middling position (2.78) in their concerns levels, as indicated by the entire population means, which are displayed in Table 2 below.

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Table 2: Summary of general characteristics based on students' response to the Self part of the instrument

Category	Value	Label	Mean	Std Dev	Cases
Term	Entire Pop.		2.7879	.7341	66
	Term 1	Fall	2.8542	.7716	48
	Term 2	Spring	2.6111	.6077	18
Course	Entire Pop.		2.7879	.7341	66
	Course 4	All ED-202	2.8039	.8005	51
	Course 5	ED300-level	2.7333	.4577	15
Gender	Entire Pop.		2.7879	.7341	66
	Gender 1	Male	2.7222	.7519	18
	Gender 2	Female	2.8125	.7339	48
Age	Entire Pop.		2.7879	.7341	66
	Age 1	18-20 Years	2.7576	.6629	33
	Age 2	21-24	2.6842	.5824	19
	Age 3	25-30	3.0000	1.0377	14
Self	Entire Pop.		2.7879	.7341	66
	Ethnicit 4	Non-White	2.7857	.5789	14
	Ethnicit 5	White	2.7885	.7755	52
Self	Entire Pop.		2.7879	.7341	66
	Classrnk 2	Sophomore	2.7500	.6720	32
	Classrnk 3	Junior	2.6190	.6690	21
	Classrnk 4	Senior	3.1538	.8987	13
Teachare	Entire Pop.		2.8000	.7552	55
	Teachare 1	Languages	2.7895	.6306	19
	Teachare 2	Sciences	2.6190	.7400	21
	Teachare 3	Others	3.0667	.8837	15
Hsdivers	Entire Pop.		2.8000	.7331	65
	Hsdivers 2	6 TO 10%	2.8000	.4216	10
	Hsdivers 3	11 TO 25%	2.8400	.6245	25
	Hsdivers 5	25% & More	2.7667	.8976	30

Note. Observed cases N=66; Languages= English or Foreign Languages; Others = Arts, Physical Education or Social Studies (including History majors).

When compared to their scores on Self, the sample was on a lower side of the concerns spectrum for the construct Task, with the total population score of 2.96 a little below the midpoint score position for the scale. Their score on TASK was also a little higher than the score on Self as indicated by the data in Table 3 below.

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Table 3: Summary of general characteristics based on students' response to the Task part of the instrument

Category	Value Label	Mean	Std Dev	Cases
Term	Entire Pop.	2.9697	.6069	66
	Term 1 Fall	3.0000	.6523	48
	Term 2 Spring	2.8889	.4714	18
Course	Entire Pop.	2.9697	.6069	66
	Course 4 ED202	3.0196	.6161	51
	Course 5 ED300-level	2.8000	.5606	15
Gender	Entire Pop	2.9697	.6069	66
	Gender 1 Male	2.9444	.5393	18
	Gender 2 Female	2.9792	.6355	48
Age	Entire Pop.	2.9697	.6069	66
	Age 1 18-20 Years	2.9394	.6093	33
	Age 2 21-24 Years	2.8947	.3153	19
	Age 3 25-30	3.1429	.8644	14
Ethnicit	Entire Pop.	2.9697	.6069	66
	Ethnicit 4 Non-White	3.0714	.4746	14
	Ethnicit 5 White	2.9423	.6390	52
Classrnk	Entire Pop.	2.9697	.6069	66
	Classrnk 2 Sophomore	2.9063	.5303	32
	Classrnk 3 Junior	2.8571	.5732	21
	Classrnk 4 Senior	3.3077	.7511	13
Teachare	Entire Pop.	3.0182	.6233	55
	Teachare 1 Languages	2.8421	.5015	19
	Teachare 2 Sciences	2.9048	.4364	21
	Teachare 3 Others	3.4000	.8281	15
Hsdivers	Entire Pop.	2.9846	.5993	65
	Hsdivers 2 6 TO 10%	2.8000	.4216	10
	Hsdivers 3 11 TO 25%	3.0000	.5000	25
	Hsdivers 5 26 or More	3.0333	.7184	30

Note. Observed cases N=66; Languages= English or Foreign Languages; Others = Arts, Physical Education or Social Studies (including History majors).

Similarly, the group was at an even much lower level of concerns when they responded to the Impact part of the instrument. Their average score of 2.39 was far lower than the scale's midpoint position and lower than the scores on the other two variables. The following table (Table 4) displays the summary of data on that variable.

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Table 4: Summary of general population characteristics based on students' response to the Impact part of the instrument

Category	Value	Label	Mean	Std Dev	Cases
Term	Entire Pop.		2.3939	.7417	66
	Term 1	Fall	2.3958	.8184	48
	Term 2	Spring	2.3889	.5016	18
Course	Entire Pop.		2.3939	.7417	66
	Course 4	All ED202	2.4118	.8044	51
	Course 5	ED300-level	2.3333	.4880	15
Gender	Entire Pop.		2.3939	.7417	66
	Gender 1	Male	2.4444	.6157	18
	Gender 2	Female	2.3750	.7889	48
Age	Entire Pop.		2.3939	.7417	66
	Age 1	18-20 Years	2.3636	.6030	33
	Age 2	21-24	2.2632	.5620	19
	Age 3	25-30	2.6429	1.1507	14
Ethnicit	Entire Pop.		2.3939	.7417	66
	Ethnicit 4	Non-Whites	2.4286	.5136	14
	Ethnicit 5	White	2.3846	.7959	52
Classrnk	Entire Pop.		2.3939	.7417	66
	Classrnk 2	Sophomore	2.2813	.5811	32
	Classrnk 3	Junior	2.2857	.6437	21
	Classrnk 4	Senior	2.8462	1.0682	13
Teachare	Entire Pop.		2.4000	.7601	55
	Teachare 1	Languages	2.3158	.5824	19
	Teachare 2	Sciences	2.1905	.6016	21
	Teachare 3	Others	2.8000	1.0142	15
Hsdivers	Entire Pop.		2.4000	.7458	65
	Hsdivers 2	6 TO 10%	2.3000	.4830	10
	Hsdivers 3	11 TO 25%	2.2800	.6782	25
	Hsdivers 5	26% or More	2.5333	.8604	30

Note: Observed cases N=66; Languages= English or Foreign Languages; Others = Arts, Physical Education or Social Studies (including History majors.

Instrument Reliability

The first assumed hypothesis was that there was no difference between the Cronbach alpha coefficients in this study and the ones obtained in previous studies on a similar population for the overall instrument. All items were highly predictive of

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each other and of the total. Table 5 below summarizes the obtained internal consistency coefficient in this study, expressed in Cronbach alpha values, which are compared to the ones obtained by Rogan, Borich & Taylor (1992).

Table 5: Instrument Reliability Coefficient Cronbach Alpha

		Cronbach Alpha	
Variables	# of items	Rogan, Borich & Taylor 1992	This Study
Entire Instrument	45	na	.9541
Task	15	91	.8775
Self	15	84	.8853
Impact	15	94	.9022

Note. Sample size N=66; na= Values not available in that study.

The alpha levels were equal or slightly exceeding the ones reported by Rogan, Borich & Taylor (1992). The reliability coefficients for all three parts of the checklist (within a three-factor theory) indicate equally and relatively high levels when compared with the standards reported in previous studies. The hypotheses that the Cronbach alpha coefficient should be equal to the usually expected levels is supported by these data. The reliability index of .70 for affective measures recommended by Stanley (1992) and Gable (1986, p. 147) was exceeded by the obtained alpha values when the 45 items were considered as the whole instrument (i.e., under the one-factor model) as well as for the separate instrument parts (under the three-factor model).

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There was also a strong correlation between scores on the total instrument and the scores on the three parts (Self, Task, Impact) as indicated by the data in the table below (Table 6).

Table 6: Correlation between total instrument and the three parts

Correlations:	Total	Self	Task	Impact
Total	1.0000	.9332**	.9220**	.9097**
Self	.9332**	1.0000	.8188**	.7523**
Task	.9220**	.8188**	1.0000	.7528**
Impact	.9097**	.7523**	.7528**	1.0000

Note. N of cases= 66; 1-tailed Significance; * = significant at p< .01; ** = significant at p< .001; Total = scores on total

When separate groups were considered, relatively high coefficients were also obtained across semesters and course groups, as the results are shown in a detailed table in the Appendix 3.

To examine the theoretical construct of the pattern "concerns for Self higher than concerns for Task and Impact" (here referred to as the 'Self > Task > Impact' structure), it was hypothesized that the means on all three parts of the instrument would be the same for the whole group as a sample as well as for any sub-categories within the sample, and the pattern of mean sizes would follow the decreasing order from Self to Impact. Since the data on the three parts were derived from the same cases, a t-test for dependent groups was used. Table 7

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indicates the dependent t-test results when all observed cases are included as one sample.

Table 7: t-Test Results for construct Self>Task>Impact for all cases

Variable	Mean 1	Mean 2	df	t	2-Tail Prob.
Self/TASK	2.7879	2.9697	65	-2.99	.004*
Self/Impact	2.7879	2.3939	65	6.12	.000*
Task/Impact	2.9697	2.3939	65	8.86	.000*

Note. * = Significance at p<.05; Observed cases N=66.

The null hypothesis of no significant difference in scores on the three variables Self, Task and Impact for the entire group is rejected. Significant differences in mean scores are shown by the data about the three parts of the instrument (the three constructs) for the group and a decreasing pattern of mean sizes is exhibited by the data, with preservice students scoring higher on concerns for Self and Task than concerns for Impact. The three-factor theory is supported by these data.

Similarly, to examine further the theoretical construct of the pattern Self>Task>Impact, it was hypothesized that there would be no difference in the pattern of mean scores obtained in this study on Self, Task or Impact for specific sub-groups in the sample. The means would be the same and the pattern of mean sizes would follow the decreasing order from Self and Task to Impact for each identified sub-group within the sample.

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Similarly to the t-test results for the whole sample, the data for sub-categories in the sample support the rejection of the null hypothesis about means differences on Self, Task and Impact for each identified sub-group. A pattern of mean sizes decreasing from Self/Task to Impact is indicated by the data. As the data indicate, the preservice teachers at stage of course 200-300 level have more concerns for self or task than concerns for impact. The differences of other variables than participation in education course may have some influence on the pattern as exhibited, but the general pattern predicted by the proposed theory is observable. The three-factor theory is supported by the data for each identified sub-group in the sample, as displayed in Table 8.

Table 8 About here

Since the researchers in this study was concerned about patterns for preservice students as they progress in the teacher education course sequence, the pattern was displayed in the following graphs for the three dimensions in the construct. The data are based on the mean scores indicated by the group on all three dimensions, arranged in the order which is postulated by the theory. A contrast is being shown in the pattern for data

from the whole group as a sample and from sub-groups identified by course. Figure 4 below illiustrates data for the whole group as a sample.

Figure 4 About here

The data represented in Figure 4 confirm the basic assumption of the theory about the 'decreasing' order of the concerns for preservice teachers. However, the shift from self to task is observed for the specific population represented by this group as a sample.

Similarly, the data represented for each group identified by course (Figure 5 and 6) confirm also the basic assumption of the theory about the 'decreasing' order of the concerns for preservice teachers. The decrease of emphasis from self to task seems to be occurring for sub-groups.

Figure 5 and Figure 6 about here

However, even though Education 300-level Students show the same patterns, their scores on Impact remain lower than the 200-level student's scores. This again supports the contention of

the theory that the more advanced students should be less concerned for impact than the real beginners would.

Discussion

This version of the Stages of Concerns Checklist is a reliable instrument for measuring the stages of concerns of preservice teachers in a program that focuses on developmental teachers in preservice conditions. The mediation through computer did not weaken the levels of reliability of the instrument, but rather reinforced those levels, and therefore made this mode the preferred mode in a program that intends to model integration of technology in teacher preparation. The obtained reliability indices in the upper .80 and .90 were higher than the usually expected .70 for affective measures as reported by researchers in the field (Stanley, 1992; Gable, 1986:147) on the issue of professionally acceptable levels. These indices also compared with the ones obtained by Rogan, Borich & Taylor in their validation study.

It was also hypothesized that there would be no difference in items correlations and alpha levels across semesters and across groups during the same semester. The hypothesis of no difference in correlation was rejected, based on the obtained data. Items and parts of the instrument correlated highly. The derived coefficients were high and comparable to the ones from

the comparison study. No such differences were observed when the Cronbach alpha coefficients for reliability were examined using separate groups from the sample.

In terms of construct validity of the instrument, it was hypothesized that the pattern would show the structure of teacher concerns in the order from Self to Task to Impact (Self> Task > Impact). In broad terms, this contention was supported by the data even in cases where the t-test results did not reveal the difference at a significant level. While the data from the whole sample show the existence of the posited structure of construct Self > Task > Impact, there is not such evidence of difference at a significant level for all groups at all levels. There is also a beginning reversal for the students concerns for SEF and TASK. In most cases significant differences were obtained between scores on SELF and TASK compared to scores on IMPACT. This shift in pattern may be explained by some possible interaction of the stages of concerns and some individual characteristics of these learners on one hand, and the size of the sample or program effects on the other.

Recommendations for design and further instrument research

The following recommendations should be made based on the these data:

1. While the overall checklist shows some degree of reliability

and stability across groups, the instrument validity must be checked against some other existing independent measures of teachers' stages of development to reveal other aspects of its validity. Erikson's measures of psychosocial development, for example, is a good candidate for testing the instrument concurrent validity within the Ferrum Teacher Education program because that theoretical model is used in the foundations course (Educ-300 and more advanced level courses). The Measure of Psychosocial Development (MPD) developed by Hawley (1988) and Psychological Assessment, Inc. has been systematically applied to the students in that course at the beginning of every semester.

2. Likewise, the sample on which the checklist is being applied must be increased in order to enhance the randomization of the effects and enhance the instrument potential for external validity. One way of increasing the sample in the context of small-size institutions is to apply the instrument and obtain both pre- and post- data on every group over consecutive semesters. The pre- and post- administrations serve another important purpose which is highlighted under recommendation #5 below.

3. More control over conditions of administration both at the pretest and posttest. Among the many conditions of administration, the possible effect of the tester must be eliminated by having the instrument administration carried out by independent individuals. As an alternative, the researcher may

develop an interactive Hypercard or Linkway folder to make the tester less visible.

4. Once conditions under #1, #2, and #3 above are controlled, the items need to be ranked or tested for item difficulty to indicate which ones need to be eliminated (if any) among the least reliable so as to maximize instrument size as suggested by DeVellis (1991, 51-113) under step 8 and 9 in the proposed instrument validation process.

5. There is a need to control for the effect of interacting variables to bring about evidence of significance in the difference in the levels of concerns for all groups at all levels of preparation for teaching. To examine those effects, a larger sample is needed. Therefore, this instrument needs to be applied over a longer period of time as the only alternative for obtaining a larger sample size in the context of a small-size college. For the data to be useful for determining effects that are attributable to the teacher education process alone, it is recommended that pre- and post- data be obtained for groups within teacher education, and non- teacher education group must be included in the study for the purpose of comparison and generalization.

6. In the final stage of this instrument study, the computer-mediated checklist must be administered in a corrected format with a larger size and wider range of sub-groups in the teaching

population; this new sampling should include both preservice and in-service teachers and full teachers to find about the consistency of the instrument across stages of teacher development. Such an attempt was made recently by Rogan, Borich and Taylor (1992), which can enhance both construct validity (the Stages Model) and external generalizability of the findings based on the checklist.

Only under these conditions can anyone use with much confidence the results generated through the application of the computerized format of the Fuller & Borich's checklist for instructional needs assessment and programmatic evaluation.

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APPENDIX 1: The Stages of Concerns Checklist

WELCOME TO THIS PRACTICE ON BELIEFS AND CONCERNS ABOUT YOUR CAREER IN TEACHING. YOU ARE GOING TO CHECK YOURSelf ON A NUMBER OF ISSUES. AFTER YOU SEE YOUR RESULTS.. YOU WILL DISCUSS THE ISSUES WITH YOUR INSTRUCTOR AND YOUR CLASS. BUT FIRST.. I WANT TO KNOW MORE ABOUT YOUR...

PLEASE PRESS A KEY TO CONTINUE

.....

EOQXXXX

CONCERNS ABOUT TEACHING

(Adapted from ROGAN..BORICH & TAYLOR 1992.. BORICH 1992)

PRESS A KEY TO START .....

Always use NUMBER keys on top section of Keyboard.

EOQ1XXX

What SECTION OF THE Course "THE EDUCATION OF TEACHERS" are YOU in?

<1> 202

<2> 301

<3> 302

<4> 303

<4> 305

<5> 401

<6> 402

<7> NONE OF THE ABOVE...I AM NOT ENROLLED IN TEACHER EDUCATION

EOQxxxx

Please identify your gender group

<1> male

<2> female

EOQ0001

In which of the following age groups are you?

<1> 18-20 years

<2> 21-24 years

<3> 25-30 years

<4> 31-35 years

<5> 36 or Over

EOQ0002

With which of the following ethnic groups do you most identify?

<1> Native American

<2> Asian or Pacific Islander (e.g. China..India..Samoa)

<3> Black (not of Hispanic Origin)

<4> Hispanic (Mexico..Puerto Rico..Central/South America)

<5> White (European..North Africa..Middle East..but not Hispanic)

EOQ0003

What is your college classification?

<1> Freshman

<2> Sophomore

<3> Junior

<4> Senior

<5> Other (Alumni etc..)

EOQ0004

What is your expected or present teaching area?

<1> English (Journalism..Literature..Writing..Second Language)

<2> Fine Arts (dance..Music..theatre..drawing..speech)

<3> Home Economics or Industrial Arts

<4> Languages

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<5> Mathematics

<6> Physical Education (Wellness Education)

<7> Science

<8> Social Studies(economics..government..psychology..sociology)
<9> Other
EOQ0005

What was the approximate percentage of minority students at the high school you attended?

<1> Zero

<2> 1% to 5%
<3> 6% to 10%

<4> 11% to 25%

<5> 26% to 50% or more
EOQ0007

----------NOW MOVE TO THE NEXT SECTION----------

Please indicate the degree to which you agree or disagree with the statements in this section. Your choices will be among the five options:

1	2	3	4	5
STRONGLY AGREE	AGREE	NEITHER A OR D	DISAGREE	STRONGLY DISAGREE

You will have to decide whether you agree or disagree and how strongly you do so after you read the statement you are presented each time. Then press a NUMBER KEY to mark your choice.

-Press any key to continue-

Always use NUMBER KEYS ON TOP SECTION of your Keyboard...

EOQXXXX

---

1. I am concerned about having too many students in a class.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1001ROGBOR&TAY

---

2. My ability to maintain the appropriate degree of class control is still a big issue with me.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1002ROGBOR&TAY

---

3. I am still not sure what factors motivate students to study.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1003ROGBOR&TAY

---

4. I am preoccupied with doing well when the supervisor is present.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1004ROGBOR&TAY

---

5. I am concerned about my ability to work with disruptive students.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1005ROGBOR&TAY

---

6. It looks like I am having too little control over the curriculum.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1006ROGBOR&TAY

---

7. Getting students to behave is one thing that I am concerned about.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1007ROGBOR&TAY

---

8. I am concerned about increasing students' feeling of accomplishment.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1008ROGBOR&TAY

---

9. Obtaining a favorable evaluation of my teaching is a big concern for me.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1009ROGBOR&TAY

---

10. Whether I wish to remain in teaching is something I worry about.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1010ROGBOR&TAY

---

11. It seems there is very little clerical help for teachers.. and that worries me.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1011ROGBOR&TAY

---

12. It looks like there are too many non-instructional duties for me as a teacher and I am concerned about it.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1012ROGBOR&TAY

---

13. Being able to meet the needs of different kinds of students is something I worry about.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1013ROGBOR&TAY

---

14. I am concerned about not being able to cope with troublemakers.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1014ROGBOR&TAY

---

15. I wonder whether students respects me.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1015ROGBOR&TAY

---

16. I am concerned about recognizing the emotional and social needs of the students.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree

EOQ1016ROGBOR&TAY

17. Computers will create as many jobs as they eliminate.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree

EOQ1017ROGBOR&TAY

18. The principal may think there too much noise in my classroom. That bothers me too.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree

EOQ1018ROGBOR&TAY

19. There seems to be inadequate assistance from the specialized teachers.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree

EOQ1019ROGBOR&TAY

20. I am worried about the lack of support for schools which may be resulting in inadequate resources

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree

EOQ1020ROGBOR&TAY

21. There are too many standards and regulations set for teachers and that worries me.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree

EOQ1021ROGBOR&TAY

22. I still concerned about my ability to diagnose students with learning problems.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree

EOQ1022ROGBOR&TAY

23. I am concerned that my peers may think I am not doing a good job.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree

EOQ1023ROGBOR&TAY

24. Embarrassing situations my occur in places where I will be teaching. That is a little bit of concern for me.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree

EOQ1024ROGBOR&TAY

25. The rigid instructional outline they come up with in the schools is something I am concerned about.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree

EOQ1025ROGBOR&TAY

26. The curriculum seems to be too inflexible. I hardly have room for any of the things I wish I could do with my students.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree

EOQ1026ROGBOR&TAY

27. My big concern is whether my inadequacies would be known to

other teachers.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1027ROGBOR&TAY

---

28. The work seems overwhelming. I wonder if I will still have enough time for both rest and class preparation.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1028ROGBOR&TAY

---

29. Whether I will be able to seek and find alternative ways to ensure that my students are learning the subject-matter is a concern for me.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1029ROGBOR&TAY

---

30. I am concerned about challenging those unmotivated students.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1030ROGBOR&TAY

---

31. I am worried about losing the respect of my peers through some of the things I do with students in my class.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1031ROGBOR&TAY

---

32. I am still not sure how I would help students value learning.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1032ROGBOR&TAY

---

33. I am worried about losing the respect of my peers through some of the things I do with students in my class.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1033ROGBOR&TAY

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34. I wonder how I will ensure that all student in my class is reaching their potential.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1034ROGBOR&TAY

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35. One big concern is managing my time efficiently.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1035ROGBOR&TAY

---

36. How shall I adapt myself to the needs of so many different students? I am concerned about this.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1036ROGBOR&TAY

---

37. I am still wondering whether students can apply what they learn in my classes.

<1> Strongly Agree
<2> Agree

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<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1037ROGBOR&TAY

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38. Having a wide range of student's achievement in my class is still a big problem to deal with.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1038ROGBOR&TAY

---

39. With the amount of work out there.. I wonder if I will ever have enough time to think and plan.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1039ROGBOR&TAY

---

40. I am worried about the need to improve testing and grading procedures.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1040ROGBOR&TAY

---

41. My concern is understanding ways in which health and nutrition problems might affect learning in my classes.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1041ROGBOR&TAY

---

42. Guiding students towards intellectual and moral growth is one of my great concerns.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1042ROGBOR&TAY

---

43. Understanding why certain students make slow progress is something I still worry about.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1043ROGBOR&TAY

---

44. I might not have opportunity for professional growth and guidance for my career in the schools.. and I am really concerned about that.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1044ROGBOR&TAY

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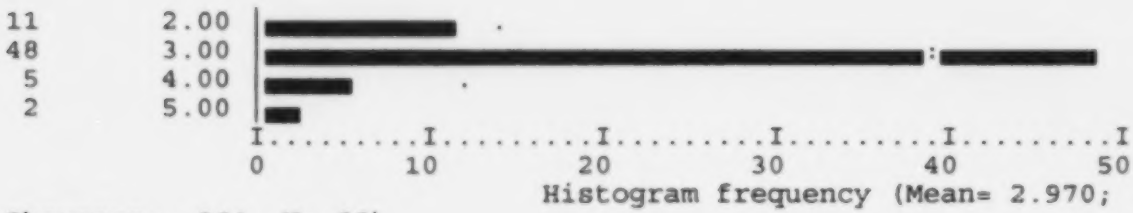
45. I am worried about losing the respect of my peers through some of the things I do with students in my class.

<1> Strongly Agree
<2> Agree
<3> Neither Agree or Disagree
<4> Disagree
<5> Strongly Disagree
EOQ1045ROGBOR&TAY EOR

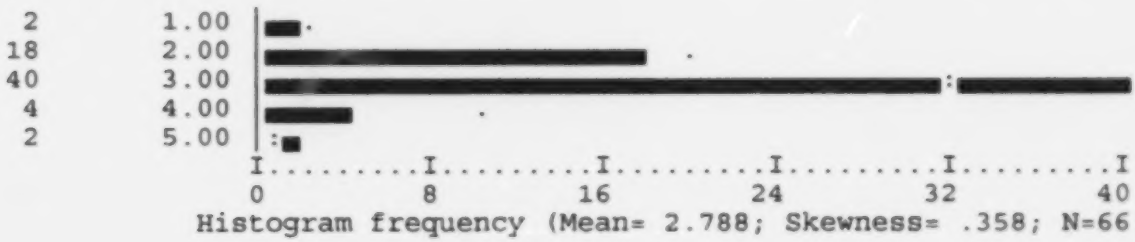
Appendix 2: Frequencies for Task Self Impact with histogram marked for normality

1. Task



Skewness= .864; N= 66)

2. Self



3. Impact

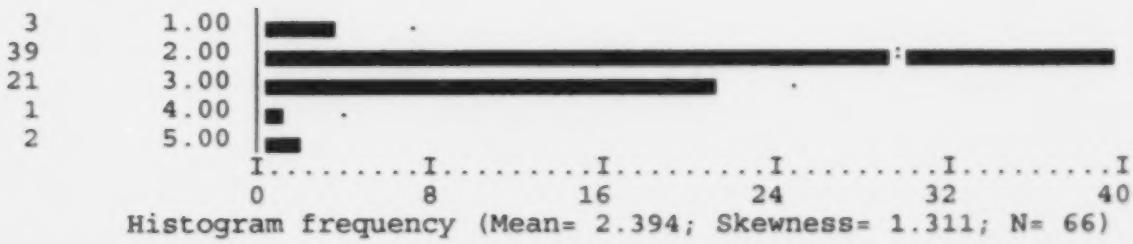


Figure 1: Pattern of Concerns for whole sample of Ferrum Teacher Education Students

Figure 1: Mean scores on SELF by groups in sample of Ferrum Teacher Education Students

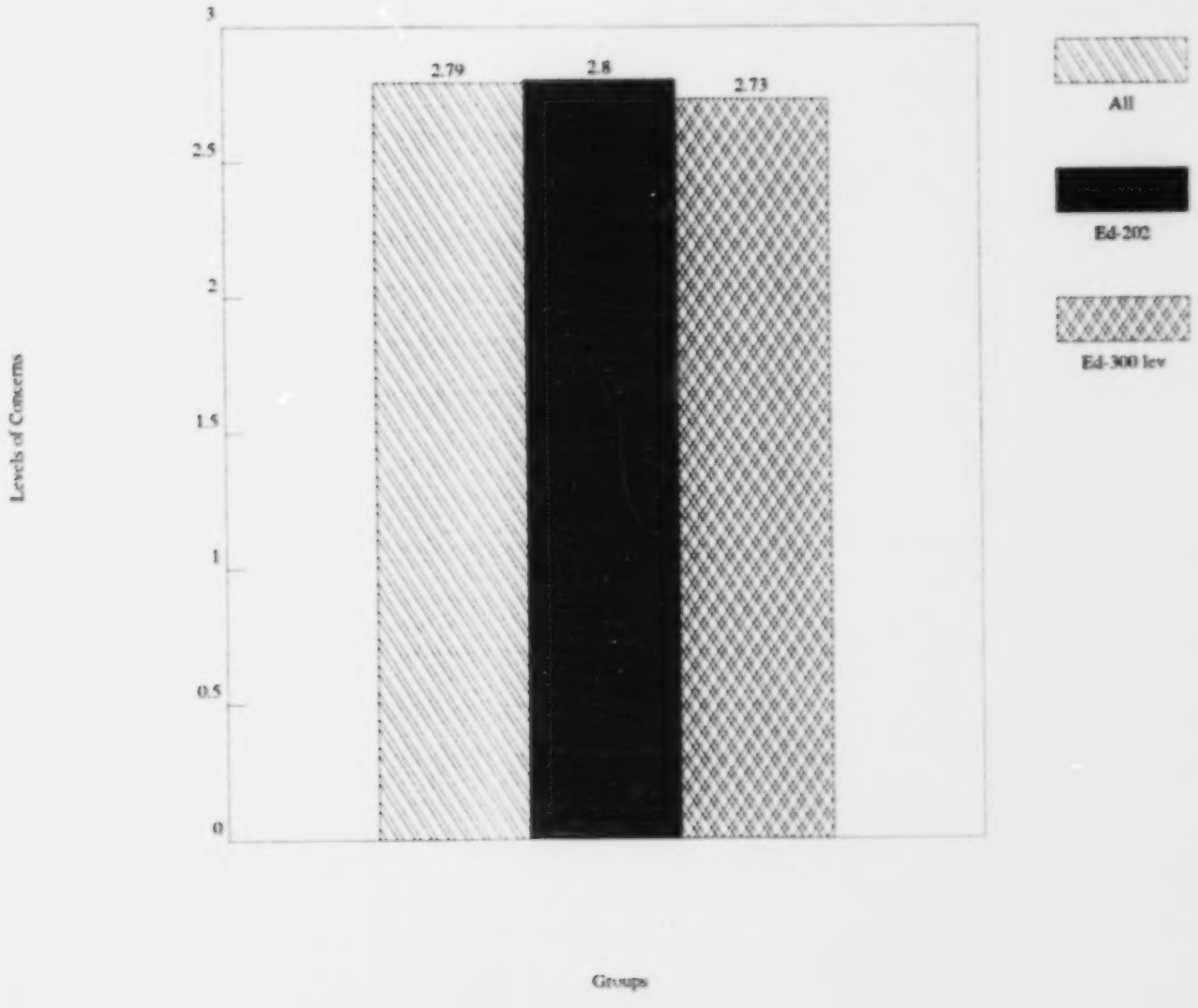


Figure 2: Mean scores on TASK by groups in sample of Ferrum Teacher Education Students

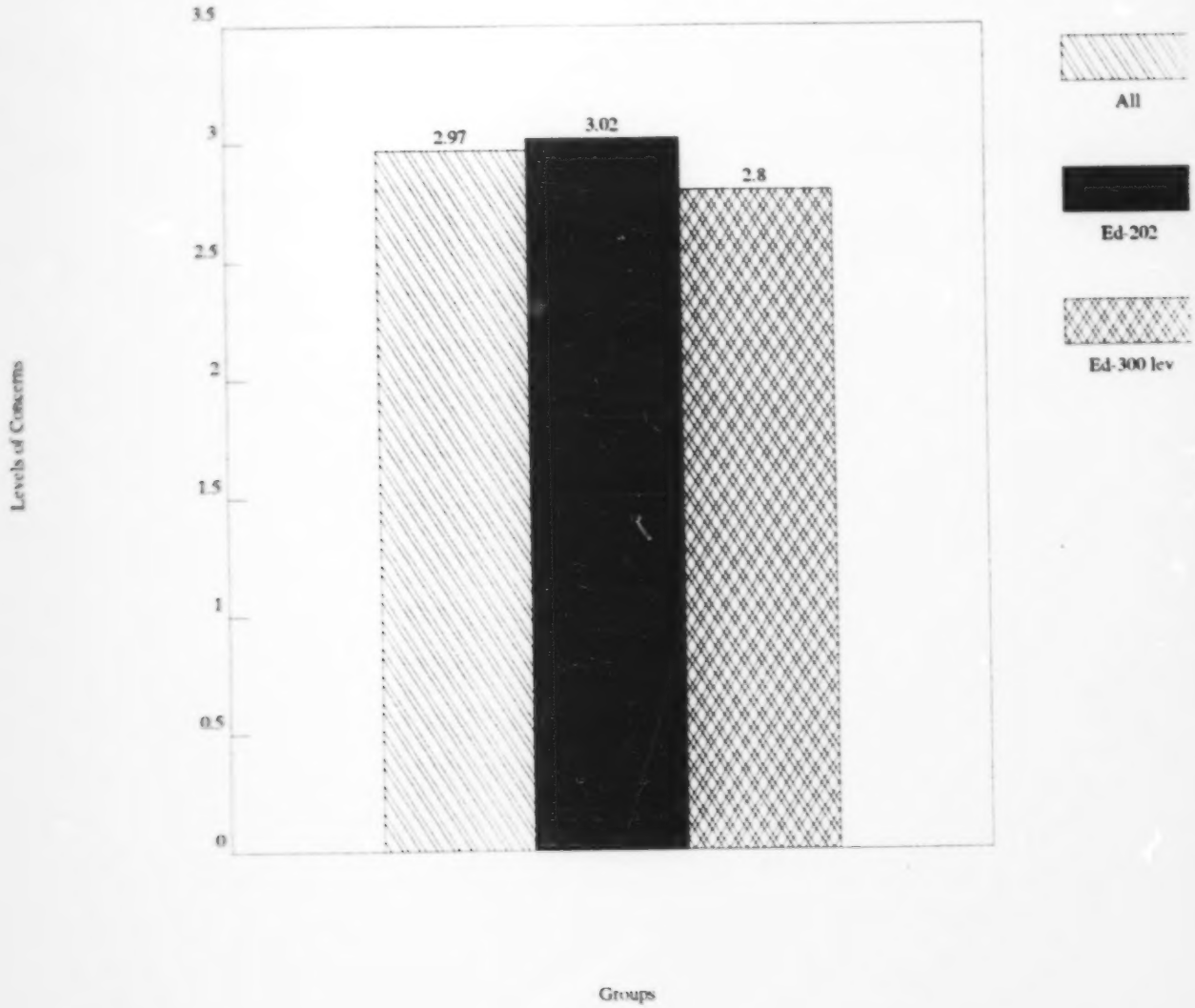


Figure 3: Mean scores on IMPACT by groups in sample of Ferrum — Teacher Education

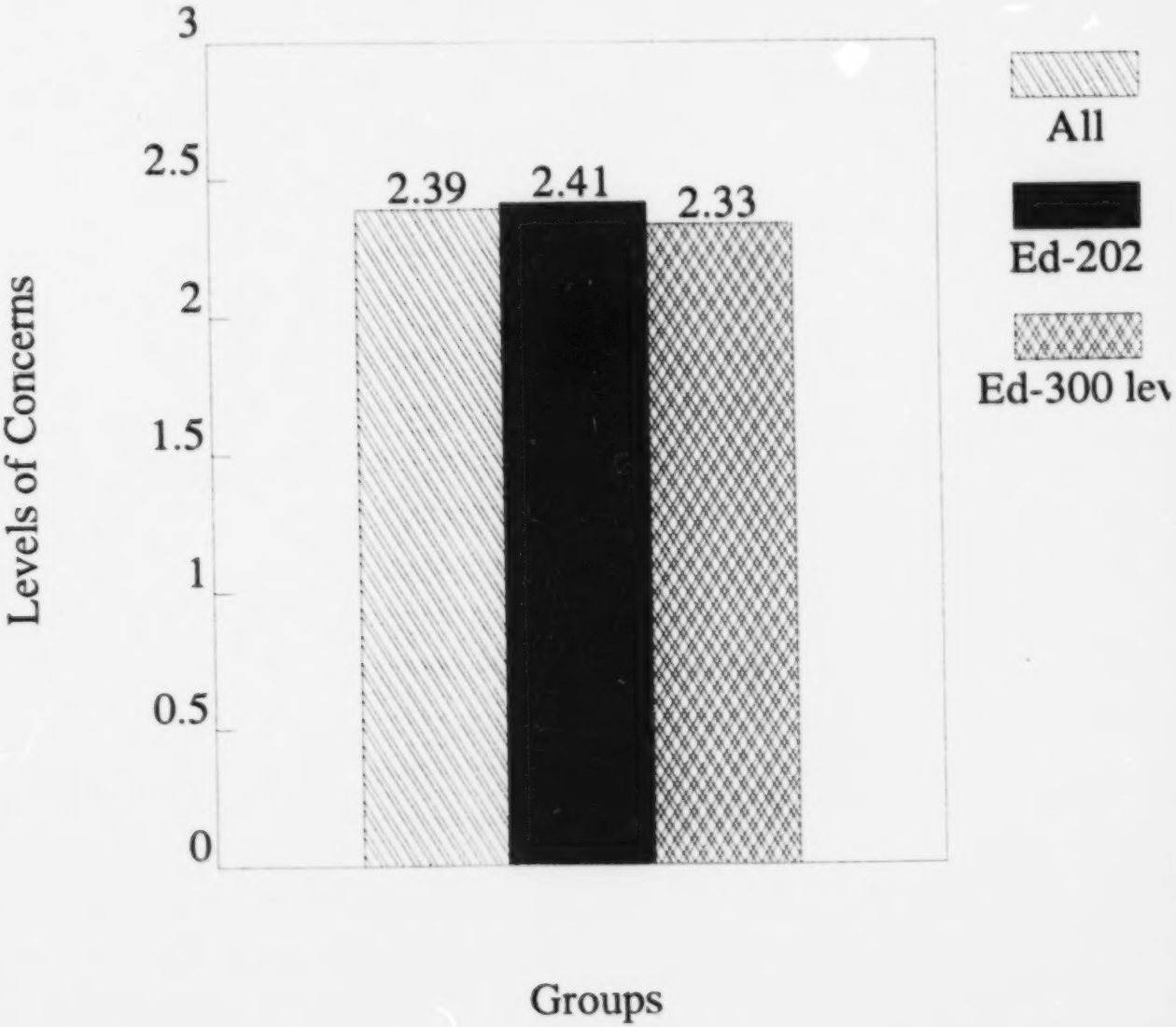


Figure 4: Pattern of Concerns for whole sample of Ferrum Teacher Education Students

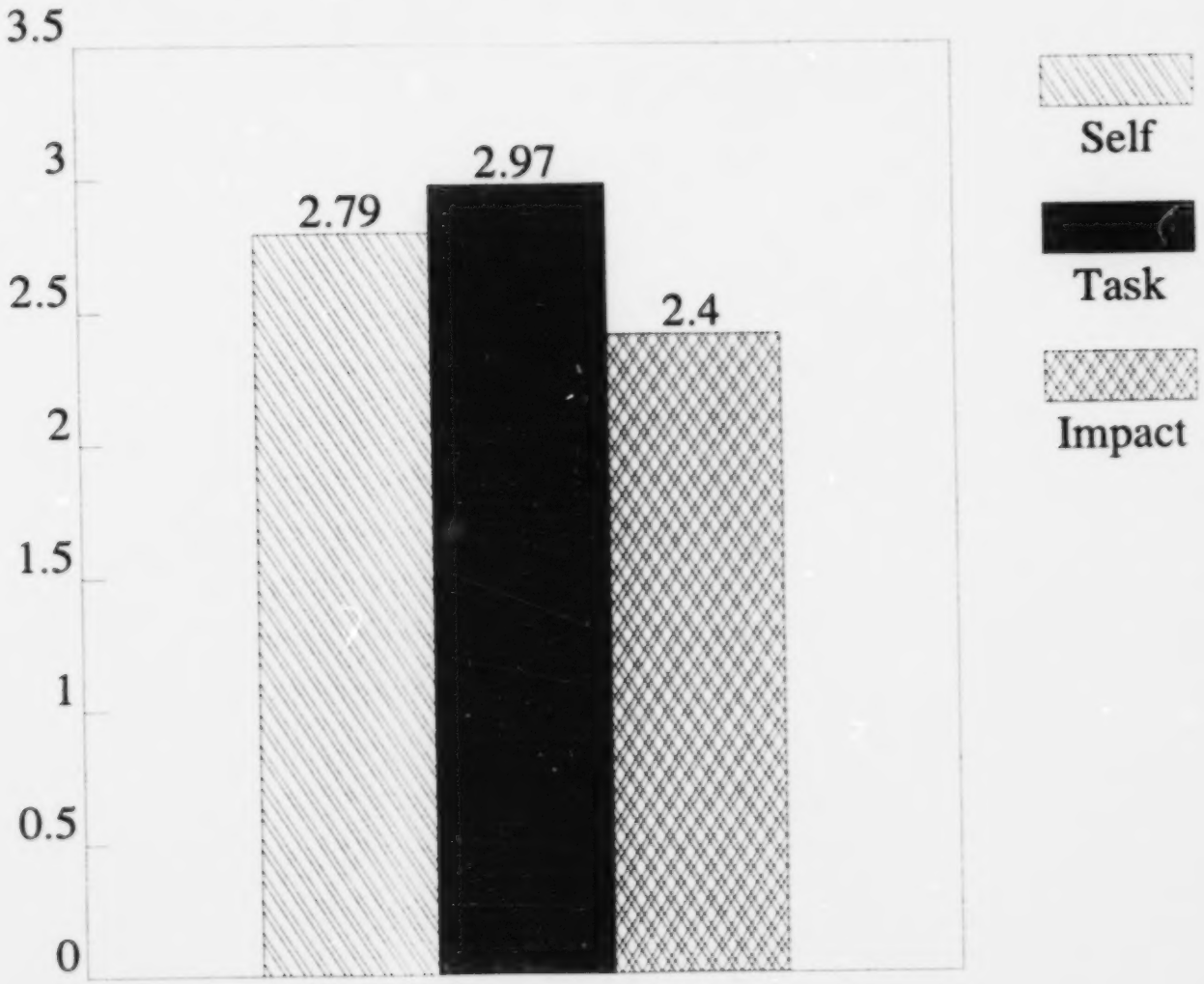


Figure 5: Pattern of Concerns for whole sample of Ferrum Teacher Education (Education 202) Students

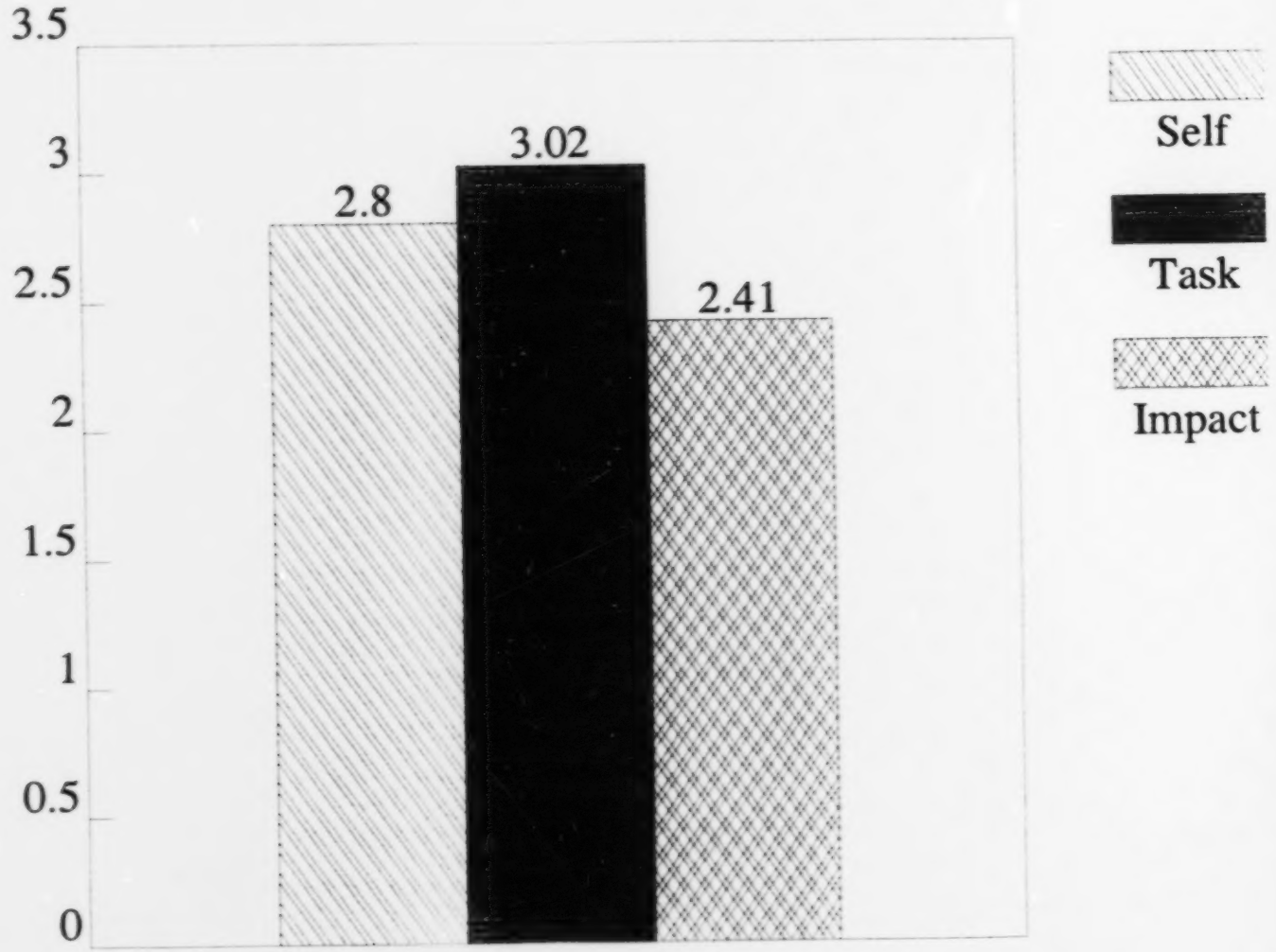


Figure 6: Pattern of Concerns for Ferrum Teacher Education

(Education 300-level Students)

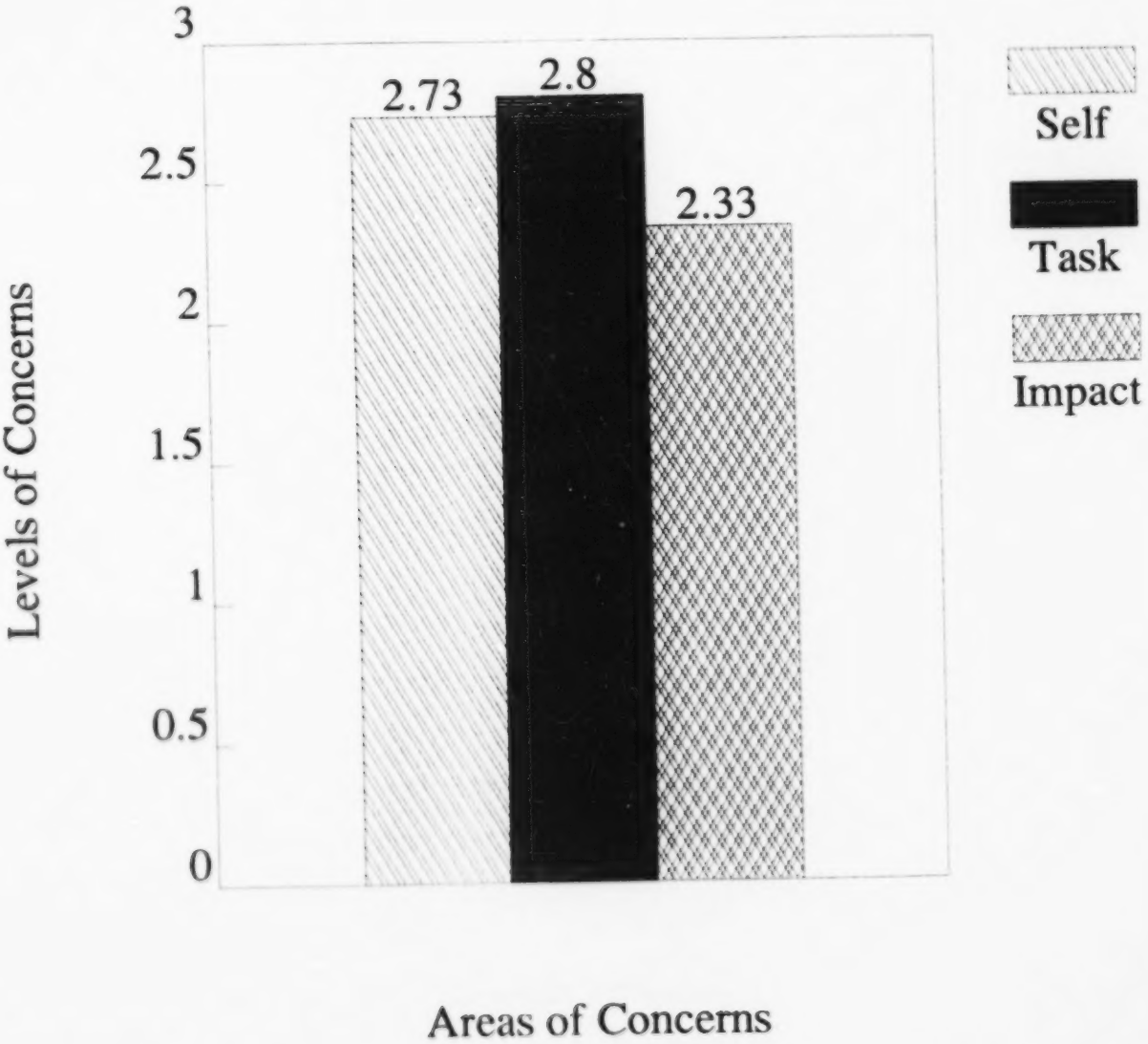


Table 8: t-test data comparison of mean scores on Self/Task/Impact for specific sub-groups in sample

Category	Variable	Cases	Mean 1	Mean 2	t	df	2-Tail Prob.
Term 1	Self/Task	48	2.8542	3.0000	-2.19	47	.033*
	Self/Impact	48	2.8542	2.3958	6.31	47	.000*
	Task/Impact	48	3.0000	2.3958	7.82	47	.000*
Term 2	Self/Task	18	2.6111	2.8889	-2.05	17	.056
	Self/Impact	18	2.6111	2.3889	1.72	17	.104
	Task/Impact	18	2.8889	2.3889	4.12	17	.001*
Course 4	Self/Self	51	2.8039	3.0196	-3.07	50	.004*
	Self/Impact	51	2.8039	2.4118	5.26	50	.000*
	Task/Impact	51	3.0196	2.4118	8.16	50	.000*
Course 5	Self/Task	14	2.7333	2.8000	-.56	14	.582
	Self/Impact	14	2.7333	2.3333	3.06	14	.009*
	Task/Impact	14	2.8000	2.3333	3.50	14	.004*
Gender 1	Self/Task	18	2.7222	2.9444	-2.20	17	.042*
	Self/Impact	18	2.7222	2.4444	2.05	17	.056
	Task/Impact	18	2.9444	2.4444	4.12	17	.001*
Gender 2	Self/Task	48	2.8125	2.9792	-2.22	47	.031*
	Self/Impact	48	2.8125	2.3750	6.05	47	.000*
	Task/Impact	48	2.9792	2.3750	7.82	47	.000*
Age 1	Self/Task	23	2.7826	2.9130	-1.37	22	.186
	Self/Impact	23	2.7826	2.3478	4.11	22	.000*
	Task /Impact	23	2.9130	2.3478	.573	22	.000*
Age 2	Self/Task	19	2.6842	2.8947	-1.71	18	.104
	Self/Impact	19	2.6842	2.2632	3.62	18	.002*
	Task/Impact	19	2.8947	2.2632	5.55	18	.000*
Age 3	Self/Task	14	3.0000	3.1429	-1.00	13	.336
	Self/Impact	14	3.0000	2.6429	2.69	13	.019*
	Task/Impact	14	3.1429	2.6429	2.88	13	.013*
Classrnk 2	Self/Task	32	2.7500	2.9063	-1.97	31	.057
	Self/Impact	32	2.7500	2.2813	4.68	31	.000*
	Task/Impact	32	2.9063	2.2813	7.19	31	.000*
Classrnk 3	Self/Task	21	2.6190	2.8571	-1.75	20	.096
	Self/Impact	21	2.6190	2.2857	3.16	20	.005*
	Task/Impact	21	2.8571	2.2857	4.38	20	.000*
Classrnk 4	Self/Task	13	3.1538	3.3077	-1.48	12	.165
	Self/Impact	13	3.1538	2.8462	2.31	12	.040*
	Task/Impact	13	3.3077	2.8462	3.21	12	.008*
Teachare 1	Self/Task	19	2.7895	2.8421	-.57	18	.578
	Self/Impact	19	2.7895	2.3158	4.02	18	.001*
	Task/Impact	19	2.8421	2.3158	4.47	18	.000*
Teachare 2	Self/Task	21	2.6190	2.9048	-2.34	20	.030*
	Self/Impact	21	2.6190	2.1905	3.29	20	.004*
	Task/Impact	21	2.9048	2.1905	5.84	20	.000*
Teachare 3	Self/Task	15	3.0667	3.4000	-2.65	14	.019*
	Self/Impact	15	3.0667	2.8000	2.26	14	.041*
	Task/Impact	15	3.4000	2.8000	4.58	14	.000*

(Table Continues)

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Category	Variable	Cases	Mean 1	Mean 2	t	df	2-Tail Prob.
Hsdivers 2	Self/Task	10	2.8000	2.8000	.00	9	1.000
	Self/Impact	10	2.8000	2.3000	3.00	9	.015*
	Task/Impact	10	2.8000	2.3000	3.00	9	.015*
Hsdivers 3	Self/Task	25	2.8400	3.0000	-1.69	24	.103
	Self/Impact	25	2.8400	2.2800	5.53	24	.000*
	Task/Impact	25	3.0000	2.2800	6.65	24	.000*
Hsdivers 5	Self/Task	30	2.7667	3.0333	-2.80	29	.009*
	Self/Impact	30	2.7667	2.5333	2.54	29	.017*
	Task/Impact	30	3.0333	2.5333	5.39	29	.000*
Ethnicit 4	Self/Task	14	2.7857	3.0714	-2.28	13	.040*
	Self/Impact	14	2.7857	2.4286	2.69	13	.019*
	Task/Impact	14	3.0714	2.4286	4.84	13	.000*
Ethnicit 5	Self/Task	52	2.7885	2.9423	-2.22	51	.031*
	Self/Impact	52	2.7885	2.3846	5.46	51	.000*
	Task/Impact	52	2.9423	2.3846	7.46	51	.000*

Note: Term 1 =Fall; Term 2= Spring; Course 4= Educ-202; Course 5= EDUC-300 level; Gender 1= Male; Gender 2= Female; Age 1= 18-20 Years; Age 2= 21-24 Years; Age 3= 25-30; Classrnk 2= Sophomore; Classrnk 3= Junior; Classrnk 4= Senior; Teachare 1= Language; Teachare 2= Sciences; Teachare 3= Other areas; Hsdivers 2= 6 TO 10% Low Minority Mix; Hsdivers 3= 11 TO 25% Middle Minority Mix; Hsdivers 5= 25 OR MORE High Minority Mix; Ethnicit 4= Non-White Ethnic; Ethnicit 5 = White Ethnic; * = significant at $p < 0.05$

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